4.10 ENERGY AND MINERALS

This section describes energy and mineral resources, such as oil, natural gas, electricity, and sand and gravel, in the proposed Project vicinity and evaluates whether construction or operation of the proposed Project would restrict access to exploitable oil, gas, or mineral resources or be incompatible with adopted energy conservation plans or existing energy standards. This section also addresses comments received during public scoping in March 2004 and during the public review period for the October 2004 Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Commenters requested more information on oil and gas lease sales in the Project area and a discussion of Federal energy and mineral laws. Related information on natural gas and Federal and State energy needs is provided in Section 1.2, "Project Purpose, Need, and Objectives." Energy conservation and renewable energy sources are also discussed in Chapter 3, "Alternatives."

As discussed in Section 1.2, the U.S. Department of Energy's Energy Information Administration (EIA), California Energy Resources Conservation and Development Commission (California Energy Commission [CEC]), and the California Public Utilities Commission (CPUC) are the primary sources of energy information used in this document. The CEC and CPUC are responsible under California law for ensuring that the State's energy-related interests and needs are met. Oil and gas production data are also available on the websites of the U.S. Minerals Management Service (MMS) and the California Department of Conservation, Division of Oil, Gas, & Geothermal Resources (CDOGGR).[1]

The U.S. Coast Guard (USCG), U.S. Maritime Administration (MARAD), and the California State Lands Commission (CSLC) are not responsible for determining Federal and State energy needs or supplies. The agencies are required to use the information developed or provided by those Federal and State agencies that have authority over or expertise in that field, specifically, data compiled from the EIA and the CEC. This document uses recent available data from the CEC, including the 2003 Energy Action Plan, 2003 Integrated Energy Policy Report, and 2005 Natural Gas Assessment Update (CEC 2003; CEC and CPUC 2003; CEC 2005b). The 2005 Natural Gas Assessment Update largely relies on the CEC's 2003 Integrated Energy Report data for natural gas demand, supply, and price projections. The CEC's recently published Integrated Policy Report projects that California's natural gas demand will be slower than the rests of the nation's because of the state's energy efficiency measures and use of renewable fuels; however, the demand is growing. California's total natural gas demand is projected to increase 0.7 percent per year from 2006 to 2016 (CEC 2005d).

[1] Data cited in Section 4.10 on numbers of wells and volumes of oil and gas produced from Federal and State fields can be found at http://www.mms.gov/omm/pacific/ and http://opi.consrv.ca.gov/opi/opi.dll.

4.10.1 Environmental Setting

4.10.1.1 Energy Resources

According to the EIA and the CEC, petroleum and natural gas are the two primary fuels that drive California's energy system. California produces about 42 percent of the petroleum it consumes, 16 percent of the natural gas, and 77.7 percent of the electricity (CEC 2005c). The remaining energy is imported and consists of crude oil from Alaska and foreign sources and electricity and natural gas from Canada, the Pacific Northwest, the Rocky Mountain States, and the Southwest. Energy sources for electricity generation include natural gas (41.9 percent), coal (19.8 percent), large hydroelectric (14.8 percent), nuclear (12.9 percent), and renewable sources (10.6 percent). Energy sources in the Project area (offshore Oxnard and Malibu and in Santa Clarita) are identified below.

Oil and Gas Resources

California has a legislative moratorium on new offshore oil and gas leasing in State waters and a moratorium on leasing has been established in Federal waters until 2008; however, development may and does occur within offshore areas leased before the moratoriums.[2] Proposals by the Minerals Management Service to extend the lease periods for development of 36 offshore areas leased before the Federal moratorium were reviewed by the California Coastal Commission. In August 2005, the CCC objected to a consistency determination by the Minerals Management Service for leases in the Cavern Point Unit (lease numbers OCS-P 0210 and OCS-P 0527), located in Federal waters offshore Ventura County north of Anacapa Island, finding that the consistency determination lacked information necessary to evaluate the Project's consistency with the California Coastal Management Program (CCC 2005).

Because the USCG, MARAD, and CSLC cannot foresee the future status of offshore oil and gas leasing in California, they must evaluate the Project under current and reasonably foreseeable conditions. Under reasonably foreseeable conditions, oil and gas development in the Project area would not be a potential competing use. Following construction, the Project area would return to baseline conditions. If the Federal moratorium were to be lifted, the availability of directional drilling techniques would allow exploitation of resources far below the proposed pipeline(s).

[2] The existing Federal leases were issued by the U.S. Department of the Interior's Minerals Management Service before 1984, and had a primary term of five years. After the initial term of the lease lapses, the lease continues in effect so long as oil and gas are produced in paying quantities or drilling operations are underway. If production or approved drilling is not underway at the end of the lease term, the lease expires and the lessee loses the tight to exploit the oil and gas resources in the lease area (30 Code of Federal Regulations Part 250.180). The Minerals Management Service has not conducted a Federal lease sale off the coast of California since 1984. In 1990, former President George H. W. Bush imposed a leasing moratorium offshore California, among other areas, in response to findings by the National Research Council that environmental information was inadequate to properly inform leasing offshore Florida and California.

Offshore – Proposed FSRU/Subsea Pipelines

Platform Gina, a Federal platform, is the oil and gas production platform nearest to the proposed FSRU and offshore pipelines (see Figure 2.1-2 in Chapter 2, "Description of the Proposed Action"). Platform Gina has 15 well slots and is located approximately 4.8 nautical miles (NM) (5.5 miles or 8.9 kilometers [km]) west of the closest part of the proposed offshore pipelines. Product from Platform Gina is sent by pipeline to the Mandalay Onshore Separation Facility, which is located in the City of Oxnard just south of and adjacent to the Reliant Energy Mandalay Generating Station. Cumulative oil and gas production from Platform Gina since it was installed in December 1980 exceeds 10.5 million and 5.6 million barrels (bbl) (441 million and 235 million gallons, or 1.7 million and 0.9 million cubic meters [m^3]), respectively (production as of March 2003).

No State platforms are located near the proposed Project area; the nearest State platform is Platform Holly, located offshore of Goleta in Santa Barbara County.

Onshore – Proposed Center Road Pipeline Area

The City of Oxnard has three active oil and gas fields within its sphere of influence: the Santa Clara Avenue Field, Oxnard Field, and West Montalvo Field. A fourth field, the El Rio Field, last produced in 1993 and all wells in this field are now plugged and abandoned (City of Oxnard 1990).

The Santa Clara Avenue Field is mainly north of U.S. 101 (Ventura Freeway) and lies between the proposed Center Road Pipeline and Center Road Pipeline Alternative 1 routes. There are 42 wells in the Santa Clara Avenue Field, of which 28 are currently active and the remaining are either idle or plugged (CDOGGR 2005). Most of the wells in this field are considered stripper wells, which are wells that produce fewer than 10 bbl (420 gallons or 1.6 m^3) of oil per day. The average daily production from this field in 2004 was 194 bbl (8,150 gallons or 30.8 m^3) of oil and 8.4 thousand cubic feet (Mcf) (238 m^3) of gas.

The proposed Center Road Pipeline route traverses the Oxnard Field, which is directly west of the Camarillo Airport and south of U.S. 101. There are approximately 290 wells in the Oxnard Field, of which about 46 are considered producing. In 2004 the Oxnard Field produced an average of 247 bbl (10,400 gallons or 39 m^3) of oil and 16.5 Mcf (467 m^3) of gas per day. The proposed pipeline route comes within approximately 200 feet (61 m) of 11 active oil and gas wells in the Oxnard Field between milepost (MP) 7.0 and 9.0.

The Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative comes ashore within the West Montalvo Field. There are approximately 28 active producing wells in West Montalvo that together produced an average of 861 bbl (36,200 gallons or 137 m^3) of oil and 743 Mcf (21,040 m^3) of gas per day in 2004.

Onshore – Proposed Line 225 Pipeline Loop Area

There are several active or abandoned oil and gas fields near the proposed Line 225 Pipeline Loop, such as those in Placerita Canyon and near the town of Castaic. The nearest producing field is the Honor Rancho Field located adjacent to the west end of the proposed pipeline by the Honor Rancho Valve Station. This field has fewer than 10 active production wells. During 2004 this field produced an average of 185 bbl (7,770 gallons or 29.4 m^3) of oil and 24,296 Mcf (688,000 m^3) of gas a day. The other nearby fields, Castaic Junction, Saugus, and Bouquet Canyon, are abandoned and no longer have producing wells.

Electrical Facilities

Offshore – Proposed FSRU/Subsea Pipelines

Electricity aboard the FSRU would be provided by four onboard dual fuel (natural gas and diesel fuel) generators and one diesel fuel emergency backup generator, not power cables to or from shore. The four dual fuel generators would operate primarily using natural gas (boil-off from the Moss tanks and/or natural gas that has been regasified on the FSRU). Diesel fuel would only be used in the event of an emergency, when the supply of natural gas was not available, for monthly testing, or during emergency training drills. Estimated diesel fuel usage is 350 gallons (1.3 m^3) per month, or 4,200 gallons (16 m^3) per year. The FSRU would not have an engine and, therefore, fuel would not be needed for transportation. The carriers bringing LNG from Australia to the FSRU would operate using the onboard LNG and would consume approximately 4 million gallons (15,140 m^3) of the LNG during the round trip. Other Project-related energy consumption includes the two permanent tug/supply vessels and the crew boat, which would operate on natural gas supplied by the FSRU. As a result, the Project would affect neither peak nor base period electricity demands.

Onshore – Proposed Center Road Pipeline Area

Reliant Energy operates two major electrical generation facilities in Ventura County – the Mandalay facility in west Oxnard, and the Ormond Beach facility, located where the proposed Center Road Pipeline route would begin. The Mandalay Generating Station consists of two 215 megawatt (MW) and one 140 MW oil-gas units with a total generating capacity of 570 MW. The Ormond Beach Generating Station consists of two conventional 750 MW oil-gas units with a total generating capacity of 1,500 MW (CEC 2005a). A high voltage electrical transmission line from the Ormond Beach Generating Station runs generally east-west and intersects with the proposed Center Road pipeline at the intersection of Pidduck/Dufau Road and Nauman Road, near State Route 1 (Pacific Coast Highway).

There are three 66-kilovolt (KV) distribution substations in the Oxnard portion of the Project area: the Levi substation, located at U.S. 101 and Dempsey Road, which serves the Port of Hueneme and the southern section of the City of Oxnard; the Gonzales substation, at the northeast corner of Oxnard Boulevard and Vineyard Avenue, which

serves the north and northwest section of the City of Oxnard; and the Channel Islands substation, at the corner of Hemlock and Victoria Streets in Port Hueneme, which serves Port Hueneme and the southwest section of the City of Oxnard.

Electrical power is distributed to individual customers from the substations through distribution lines operating at 16 KV or 4 KV. These lines are normally extended underground from the substations and integrated with the existing distribution network of the area. The existing electric power line from the Ormond Beach facility runs along the right-of-way of the proposed Center Road Pipeline route.

Onshore – Proposed Line 225 Pipeline Loop Area

There are two electrical distribution facilities within 2 miles (3.2 km) of the proposed Line 225 Pipeline Loop: a major distribution station at the intersection of Copper Hill Drive and Newhall Ranch Road, and a substation near the intersection of State Route 126 (Magic Mountain Parkway) and Tourney Road (Follstad 2005).

None of these existing electrical facilities along the proposed Center Road Pipeline and Line 225 Pipeline Loop routes would be affected by the Project.

The Project includes the installation of a 14.7-mile (23.7 km) long 36-inch (0.9 m) diameter pipeline in Oxnard and a 7.7-mile (12.4 km) long 30-inch (0.76 m) diameter pipeline in Santa Clarita, along with appurtenant facilities such as valve stations. However, the Project would neither require the construction of any new generating facilities or substations nor result in the need for new or substantially altered electrical utility systems.

4.10.1.2 Mineral/Aggregate Resources

The California State Mining and Geology Board classifies California mineral resources using the Mineral Resource Zone (MRZ) system. MRZs have been established based on the presence or absence of significant sand and gravel deposits and crushed rock source areas, e.g., products used in the production of cement. The guidelines for establishing the MRZs are as follows:

- MRZ-1 – Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that there is little likelihood for their presence;
- MRZ-2 – Areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence;
- MRZ-3 – Areas containing mineral deposits, the significance of which cannot be evaluated from available data; and
- MRZ-4 – Areas where available information is inadequate for assignment to any other MRZ.

The Ventura County Planning Department has further classified the mineral resources in a Mineral Resource Protection (MRP) zone to minimize any conflict between mining and other land uses (Ventura County 1988). Discretionary permits are not granted in areas designated as being within the MRP zone if the use significantly hampers or precludes access to, or extraction of, a mineral resource, except where one or more of the following exists:

- Use is primarily intended to protect life or property;
- Use provides a significant public benefit;
- No mineral resources are present at the site;
- Extraction of the resource is not technically or economically feasible; or
- Extraction of the resource is not feasible due to limitations imposed by the County.

The goals of the Ventura County Mineral Resources Management Program are as follows: (1) Mineral lands classified MRZ-2 or designated as areas of statewide or regional significance should be protected from preclusive and incompatible land uses so that the mineral resources of these lands and areas are available when needed; and (2) surface mining within these classified lands and designated areas should be controlled to ensure that (a) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition that is readily adaptable for alternative land uses; and (b) the production and conservation of minerals are encouraged while giving consideration to recreation, watershed, wildlife, range and forage, aesthetic enjoyment, and other environmental factors and residual hazards to public health and safety are eliminated.

Center Road Pipeline

The proposed Center Road Pipeline would not traverse any known or potential mineral resource areas. The route would traverse MRZ-1 and MRZ-4 areas. There are no MRZ-2 or MRZ-3 areas in the vicinity of the proposed Center Road Pipeline, nor is it in a Ventura County MRP zone. Thus the Project would not prevent the extraction of mineral or aggregate resources.

Line 225 Pipeline Loop

The California State Mining and Geology Board has not mapped or classified aggregate resources in this area. Mineral resources found within the City of Santa Clarita along the proposed Line 225 Pipeline Loop include placer gold gulches, lode mines, oil fields, and construction aggregates (specifically along the South Fork Santa Clara River). Gold mining has been the principal mineral extraction activity in the area, and other minerals include titanium and tuff. Except where it would cross the South Fork Santa Clara River, the pipeline route would primarily be in developed urban areas and would not traverse any known mineral or aggregate resource areas (City of Santa Clarita 1991). The South Fork Santa Clara River would be crossed using the road bridge at

Magic Mountain Parkway; therefore, this potential source of aggregate would not be affected and the Project would not prevent the extraction of mineral or aggregate resources.

4.10.1.3 California Energy Action Plan

As of 2003, the State of California used 265,000 gigawatt-hours of electricity per year, with electricity consumption growing 2 percent annually. Since the 1990s, between 29 percent and 42 percent of California's in-state generation used natural gas. The State uses 2 trillion cubic feet (56.6 billion m^3) of natural gas per year (CEC and CPUC 2003).

To offset some of the demand for natural gas, California is increasing its energy conservation programs, will retire less efficient power plants, and is diversifying its fuel mix by accelerating the Renewables Portfolio Standard. The State's 2005 Energy Action Plan recognizes that state needs reliable, long-term natural gas supplies at reasonable rates and has adopted the following eight actions to ensure these supplies will be available:

1. Adopt additional natural gas and electric efficiency programs and standards to reduce the reliance on natural gas for various end uses.
2. Establish a program to encourage solar hot water heating to reduce the reliance on natural gas for water heating.
3. Provide that the natural gas delivery and storage system is sufficient to meet California's peak demand needs.
4. Encourage the development of additional in-state natural gas storage to enhance reliability and mitigate price volatility.
5. Continue the State's LNG Interagency Permitting Working Group and develop a process to facilitate the prompt and environmentally-sensitive evaluation and siting of needed LNG facilities.
6. Establish standards for the timing of and payment for new transmission and storage capacity additions and for access to natural gas transmission systems.
7. Evaluate the appropriateness of current rules for natural gas quality.
8. Provide ongoing assessments of global natural gas markets.

Additionally, the CEC's 2005 Natural Gas Assessment Update includes importing natural gas supplies from overseas, which would require an import terminal, as a possible method of addressing rising natural gas prices in California. The Project would contribute to the diversification of natural gas supply sources and would increase energy supplies; therefore, the proposed Project is compatible with California's Energy Action Plan.

Energy Conservation

The State of California is decreasing its per capita use of electricity through increased energy conservation and efficiency measures. The following specific actions are outlined in the 2005 Energy Action Plan II (CEC and CPUC 2005):

1. Require that all cost-effective energy efficiency is integrated into utilities' resource plans on an equal basis with supply-side resource options.
2. Adopt 2006-2008 energy efficiency program portfolios and funding by late 2005.
3. Expand efforts to improve public awareness and adoption of energy efficiency measures.
4. Promote a balanced portfolio of baseload energy, demand, and peak demand reductions to obtain both reliability and long-term resource benefits of energy efficiency for both electricity and natural gas.
5. Integrate demand response programs with energy efficiency programs.
6. Implement actions outlined in the Governor's Green Buildings Action Plan to improve building performance and reduce grid-based electrical energy purchases in all State and commercial buildings by 20 percent by 2015.
7. Work with customer-owned utilities in the implementation of all cost effective energy efficiency programs so that they treat energy efficiency savings as a resource and help California reach its goal of a reduction in per capita electricity use.
8. Adopt new appliance standards by 2006, supplementing those adopted in December 2004.
9. Adopt new building standards for implementation in 2008 that include, among other measures, cost effective demand response technologies and integrated photovoltaic systems.
10. Increase the availability of State-sponsored low-interest loans for energy efficiency and clean distributed generation projects.
11. Improve energy efficiency programs for low income, non-English speaking, and other hard-to-reach communities.
12. Adopt verifiable performance-based incentives in 2006 for investor owned utility (IOU) energy efficiency investments, with risks and rewards based on performance that will align the utility incentives with customer interests.
13. Update and augment, as necessary, utility evaluation, measurement and verification protocols to assure that energy efficiency continues to be fully integrated into resource planning, emission reduction benefits are quantified, and compliance goals are verified.
14. Identify opportunities and support programs to reduce electricity demand related to the water supply system during peak hours and opportunities to reduce the energy needed to operate water conveyance and treatment systems.

15. Adopt a report on improving efficiency in existing buildings, as required by Assembly Bill 549, and pursue legislation and regulations to implement its recommendations.

These measures, individually or collectively, are anticipated to only partially offset the need for new power generation (see Section 3.3.1, "Energy Conservation," for further discussion of this issue). According to the 2005 plan, additional reliable natural gas supply options are needed in addition to other measures specifically outlined in the plan (CEC and CPUC 2005). Furthermore, taking into account the increased conservation measures, natural gas demand will have an approximately 0.7 percent annual growth rate from 2006 to 2016, according to the CEC (CEC 2005d).

Renewable Energy Sources

As of 2003, electricity from renewable sources, such as wind, geothermal, and hydropower, met approximately 11 percent of the State's total demand. The State's objective is to generate 20 percent of its electricity from renewables by 2017 and aims to accelerate the completion date to 2010, according to the 2005 Energy Action Plan II (CEC and CPUC 2005) and the CEC's Public Interest Energy Research 2003 Annual Report (CEC 2004). Also, according to the 2005 Energy Action Plan II, California will take the following specific actions:

1. Expeditiously approve contracts from the initial IOU RPS (Renewables Portfolio Standard) solicitations and interim renewable solicitations, and approve agreements for any necessary supplemental energy payments.
2. Expeditiously approve the IOU RPS solicitations for 2005 and the next three years so that California IOUs will meet the accelerated RPS goal of 20 percent renewables by 2010.
3. Consider improvements to the renewables solicitation process.
4. Ensure that operations protocols and tariffs do not discriminate against renewable resources and study the effects of increasing penetration of renewable resources on the reliable operation of the electricity grid.
5. Evaluate and develop implementation paths for achieving renewable resource goals beyond 2010, including 33 percent renewables by 2020, in light of cost benefit and risk analysis, for all load serving entities.
6. Monitor and support existing renewable resources, including facilitating repowering projects and addressing contract renewals in a timely fashion.
7. Ensure new transmission lines are built to access renewable resources through a comprehensive, integrated transmission planning process, including the creation of state-led study groups to examine tapping particular resource regions.
8. Implement a cost-effective program to achieve the 3,000 MW goal of the Governor's "Million Solar Roofs" initiative.

9. Implement RPS standards for energy service providers and community choice aggregators so that all load serving entities are contributing proportionally to California's renewable goals.
10. Work with customer-owned utilities in the development of their renewable plans and incorporate their results into a comprehensive statewide RPS review.
11. Complete the Western Renewable Generation Information System to accurately account for renewable generation through an electronic certificate tracking system.
12. Implement a renewable energy certificates trading system for meeting RPS goals.
13. Assist local permitting agencies in implementing methods of mitigating the avian impacts of wind energy generation.
14. Develop and implement forestry, agriculture, and waste management policies to encourage the generation of electricity from landfills, biomass and biogas.

The Governors of California, Nevada, Utah, and Wyoming are currently working together to spearhead the development of a new interstate high-voltage electric transmission line across the western U.S. The Frontier Line would allow for the transmission of electricity generated from renewable resources such as wind and solar power to consumers in California, Nevada, and Utah.

Most renewable energy sources are designed to generate electricity, yet an expansion in the use of renewable energy in the electrical generation industry may not be an adequate substitute to meet the current natural gas demand for many end users (see Section 3.3.2, "Renewable Energy Sources," for further discussion of this issue).

4.10.2 Regulatory Setting

Major Federal, State, and local laws and regulations related to energy and minerals are identified in Table 4.10-1. There are no applicable existing energy standards for this Project.

4.10.3 Significance Criteria

Impacts on energy and mineral resources from the construction or operation of the Project are considered significant if the Project results in any of the following adverse impacts:

- Causes a loss in availability of a known oil/gas resource that would be of value to the region and the residents of the State;
- Prevents mineral resource extraction opportunities; or
- Creates any significant effects on local or regional energy supplies.

Table 4.10-1 Major Laws, Regulatory Requirements, and Plans for Energy and Minerals

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Federal	
The Outer Continental Shelf Lands Act of 1953 *- 43 U.S.C. 1331 – 1356*	• Created to manage oil and gas resources in the outer continental shelf and to protect the environment. • Provides for lease sales and royalties.
The Coastal Zone Management Act of 1972 *- National Oceanic and Atmospheric Administration, Department of Commerce*	• Developed to preserve, protect, enhance, and develop coastal resources and lands.
The Federal Oil & Gas Royalty Management Act of 1982 *- Minerals Management Service*	• Created the Minerals Management Service, which manages the mineral resources in the outer continental shelf.
State	
Warren-Alquist Act, Public Resources Code – Division 15, "Energy Conservation and Development" (§ 25410 et seq.) *- California Energy Commission*	• The State of California adopted the Warren-Alquist Act in an effort to encourage conservation of non-renewable energy resources, and the State Energy Resources Conservation and Development Commission was created as a result.
The State Surface Mining and Reclamation Act (SMARA) of 1975 *- California Department of Conservation Office of Mine Reclamation*	• The SMARA serves to ensure the proper reclamation of surface mining operations and to safeguard access to mineral resources of regional and statewide significance in the face of competing land uses and urban expansion.
The California Coastal Act of 1976 (Public Resources Code § 30000 et seq.) *- California Coastal Commission*	• Adopted to protect and enhance Coastal Zone resources, to ensure balanced utilization of those resources, and to maximize access to the shoreline.
Local	
Ventura County Mineral Resources Management Program *- Ventura County*	• Compatible land uses for MRZ-2 areas include the following: (1) very low-density residential (0.1 units/acre), (2) extensive industrial, (3) recreation/open space, and (4) agriculture.
The City of Oxnard 2020 General Plan *- City of Oxnard*	• The 2020 General Plan (City of Oxnard 1990) provides guidance for mineral (e.g., sand and gravel) and oil and gas resources. • Land use activities where MRZ-2 areas exist should not preclude mineral extraction opportunities.

The following significance criteria are not applicable to the Project and are not analyzed further:

- The Project would not conflict with adopted energy conservation plans;
- The Project would not result in the need for new or substantially altered power or natural gas utility systems; and

- The Project would not create any significant effects on peak and base demands for electricity and other forms of energy.

4.10.4 Impact Analysis and Mitigation

Applicant-proposed measures (AM) and agency-recommended mitigation measures (MM) are defined in Section 4.1.5, "Applicant Measures and Mitigation Measures."

Impact ENE-1: Access to Oil and Gas Resources

The Project may temporarily restrict access to or availability of oil and gas resources (Class III).

During pipeline construction, access to some production facilities or well heads may be temporarily restricted due to open trenching or if there were to be emergency operations. If the Project were to cross or come close to a gathering oil or gas line, the affected line may need to be shut down temporarily during construction. This applies mainly to the Oxnard Field, through which the proposed Center Road pipeline passes. This field has limited current production, as discussed in Section 4.10.1.1, "Energy Resources." The proposed pipeline is not expected to limit the installation of any new wells because many of the wells are directionally drilled already and, if needed, it is fairly easy to offset a drill location 100 feet (30.5 m) or more.

This impact would be less than its significance criteria and no mitigation measures are required.

Impact ENE-2: Create significant effects on local or regional energy supplies.

The Project would have a beneficial impact on local and regional energy supplies (Class IV)

The Project would deliver an annual average of 800 million cubic feet (22.7 million m^3) per day of natural gas to Southern California. Therefore, within the context of the California Energy Action Plan, the Project has a beneficial impact.

Impacts and mitigation measures associated with energy and minerals are summarized in Table 4.10-2.

Table 4.10-2 Summary of Energy Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
ENE-1: The Project may temporarily limit access to or availability of onshore mineral resources such as sand/gravel and oil/gas production (Class III).	None.
ENE-2: The Project would have a beneficial impact on local and regional energy supplies (Class IV).	Not applicable.

4.10.5 Alternatives

4.10.5.1 No Action Alternative

As explained in greater detail in Section 3.4.1, “No Action Alternative,” under the No Action Alternative, MARAD would deny the license for the Cabrillo Port Project and/or the CSLC would deny the application for the proposed lease of State tide and submerged lands for a pipeline right-of-way. The No Action Alternative means that the Project would not go forward and the FSRU, associated subsea pipelines, and onshore pipelines and related facilities would not be installed. Accordingly, none of the potential environmental impacts identified for the construction and operation of the proposed Project would occur.

Since the proposed Project is privately funded, it is unknown whether the Applicant would fund another energy project in California; however, should the No Action Alternative be selected, the energy needs identified in Section 1.2, "Project Purpose, Need and Objectives," would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such proposed projects may result in potential environmental impacts of the nature and magnitude of the proposed Project as well as impacts particular to their respective configurations and operations; however, such impacts cannot be predicted with any certainty at this time.

4.10.5.2 Alternative Deepwater Port Location – Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

The Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline alternative mooring location would be located approximately 4.3, 5.9, 9.0, and 14.0 nautical miles (5, 6.8, 10.3, and 16.1 miles, or 8, 11, 16.6, and 25.9 km) from Platforms Grace, Gilda, Gail, and Gina, respectively (see Figure 2.1-2 in Chapter 2, “Description of the Proposed Action”). Platforms Gina, Gilda, and Gail are currently producing oil and gas, while Platform Grace is currently not producing (Shackell 2005). Because the wells associated with the platforms are directionally drilled and distant from the small footprint of the Project, it is not anticipated that the Project would restrict access to offshore oil and gas production. No State platforms are located near the alternative mooring location.

This alternative comes ashore in the West Montalvo Field. As discussed in Section 4.10.1.1, this old field has limited current production. The proposed pipeline should not limit the installation of any new wells because it is fairly easy to offset a drill location 100 feet (30.5 m) or more. Offshore, a moratorium on oil and gas drilling is in effect, and if it were to be lifted, the availability of directional drilling techniques would allow exploitation of resources far below the pipeline. Following construction, Project areas would return to baseline conditions.

This impact is less than its significance criteria and no mitigation measures are required.

4.10.5.3 Alternative Onshore Pipeline Routes

Center Road Pipeline Alternative 1

The Center Road Pipeline Alternative 1 passes through the Oxnard Field, similar to the proposed route. Six active wells are within approximately 200 feet (61 m) of the Center Road Pipeline Alternative 1 route.

Alternative 1 traverses a Ventura County mineral resource area from approximately MP 9.3 to 12.4. Therefore, the potential impacts for resource extraction opportunities along the Center Road Pipeline Alternative 1 route would be greater than those from the proposed route. However, because the route would be generally contained in existing rights-of-way, no adverse effects would be anticipated. The remainder of Center Road Pipeline Alternative 1 would traverse MRZ-1 and MRZ-4 areas, where there are no likely or known mineral deposits. Also, the Project would deliver an annual average of 800 million cubic feet (22.7 million m^3) per day of natural gas to Southern California, resulting in a beneficial impact on local and regional energy supplies.

These impacts are less than their significance criteria and mitigation is not required.

Center Road Pipeline Alternative 2

The Center Road Pipeline Alternative 2 pipeline route would not traverse or enter a Ventura County MRP zone but would traverse MRZ-1 and MRZ-4 areas, where there are no likely or known mineral deposits. Similar to the proposed route, this alternative would pass through the Oxnard Field and within approximately 200 feet (61 m) of three active oil wells. The potential impacts for resource extraction opportunities along the Center Road Pipeline Alternative 2 route would be similar to those from the proposed route. Also, the Project would deliver an annual average of 800 million cubic feet (22.7 million m^3) per day of natural gas to Southern California, resulting in a beneficial impact on local and regional energy supplies.

These impacts are less than their significance criteria and mitigation is not required.

Center Road Pipeline Alternative 3

There is no significant difference between this alternative and the proposed route. All impacts and impact classes would be the same and therefore no mitigation measures are required, as with the proposed route.

Line 225 Pipeline Loop Alternative

Impacts from this alternative would be similar to those from the proposed route; therefore, no mitigation measures are required, as with the proposed route.

4.10.5.4 Alternative Shore Crossings

Point Mugu Shore Crossing/Casper Road Pipeline

The energy impacts from the Point Mugu Shore Crossing/Casper Road Pipeline would be similar to those from the proposed Project. There are no active oil or gas wells or other mineral resources close to the pipeline route.

There is no significant difference between this alternative and the proposed route. All impacts and impact classes would be the same and therefore no mitigation measures are required, as with the proposed route.

Arnold Road Shore Crossing/Arnold Road Pipeline

The energy impacts from the Arnold Road Shore Crossing/Arnold Road Pipeline alternative would be approximately the same as those from the proposed Project. There are no active oil or gas wells or mineral resources close to the pipeline route.

There is no significant difference between this alternative and the proposed route. All impacts and impact classes would be the same and therefore no mitigation measures are required, as with the proposed route.

4.10.6 References

California Coastal Commission. 2005. Staff Report and Recommendation on Consistency Determination No. CD-051-05. August 11, 2005.

California Division of Oil, Gas, & Geothermal Resources (CDOGGR). 2005. Web page accessed August 5. http://opi.consrv.ca.gov/opi/opi.dll/Search?UsrP_ID=100038230&FormStack=Main%2CField&Fld_Code=662&Action=Get+Wells&PriorState=Encoded%3DTrue.

California Energy Commission (CEC). 2003. 2003 Integrated Energy Policy Report (adopted November 12, 2003). California Energy Commission Docket No. 02-IEP-1. Publication No. CEC-100-03-019F. December 2. http://www.energy.ca.gov/reports/100-03-019F.PDF.

_____. 2004. Public Interest Energy Research 2003 Annual Report. http://www.energy.ca.gov/reports/2004-04-01_500-04-010.PDF.

_____. 2005a. 2005 Database of California Power Plants. http://www.energy.ca.gov/database/index.html#powerplants.

_____. 2005b. Natural Gas Assessment Update. Staff Report, Publication No. CEC-600-2005-003. February. http://www.energy.ca.gov/2005publications/CEC-600-2005-003/CEC-600-2005-003.PDF.

_____. 2005c. California Energy Facts, Summary of California Energy. Website accessed August 5. http://www.energy.ca.gov/html/calif_energy_facts.html.

_____. 2005d. Integrated Energy Policy Report. Committee final report, Publication No. CEC-100-2005-007-CTF. Website accessed November 20. http://www.energy.ca.gov/2005publications/CEC-100-2005-007/CEC-100-2005-007-CMF.PDF

California Energy Resources Conservation and Development Commission and Public Utilities Commission (CEC and CPUC). 2003. Energy Action Plan. Adopted May 8. http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.pdf.

_____. 2005. Energy Action Plan II, Implementation Road Map for Energy Policies. Adopted September 21. Accessed December 9, 2005. http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF.

City of Oxnard. 1990. City of Oxnard 2020 General Plan. November. Includes Amendments through December 2000.

City of Santa Clarita. 1991. General Plan. http://www.ci.oxnard.ca.us/developsvcs/planning/generalplan/gen_plan_doc.html

Entrix, Inc. 2003. Environmental Analysis, Offshore Component of BHP Billiton LNG International Inc. Cabrillo Port Project. August 2003.

_____. 2004. Environmental Analysis, Onshore Component of BHP Billiton LNG International Inc. Cabrillo Port Project. May 2004.

_____. July 2005. Environmental Analysis, Center Road Alternative 3 Pipeline, Cabrillo Port, Deepwater Port in the Vicinity of Ventura, California.

Follstad, Fred, City of Santa Clarita Planning Department. 2005. Personal communication. September 14.

Gopal et al. 2003. Natural Gas Market Assessment Staff Report. California Energy Commission. 100-03-006. August. http://www.energy.ca.gov/reports/2003-08-08_100-03-006.PDF.

Shackell, Glen, Minerals Management Service. 2005. Personal communication. September 14.

Ventura County. 1988. Ventura County General Plan, Goals, Policies and Programs, Figure 1 – South Half Resource Protection Map. Adopted May 24. Amended December 10, 1996.